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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,260	10/07/2003	Cyrielle Cheng	0513-1080	3121

7590 10/29/2007

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EXAMINER	
HOOK, JAMES F	
ART UNIT	**PAPER NUMBER**
3754	
MAIL DATE	**DELIVERY MODE**
10/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/679,260	**Applicant(s)** CHENG ET AL.
	Examiner James F. Hook	**Art Unit** 3754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

As per the petition decision of October 2, 2007, claims 7-12 are hereby rejoined with the application, and a rejection based upon all claims currently pending in the application is set forth below. The previous office action of October 6, 2005 is hereby vacated in favor of the rejection below which repeats the rejection of claims 1-6 and further adds a rejection of claims 7-12. Since these claims would have been able to be finally rejected in the previous office action, the instant action is again made final (see below).

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrander in view of Fukushi and Kodama. The patent to Ostrander discloses the recited hose for transporting fluid containing hydrogen such as fuels comprising an inner layer of a fluorine based thermoplastic material such as polyvinylidene fluoride (PVDF) or ethylenetetrafluoroethylene (ETFE), a layer in some embodiments can be provided as a barrier layer comprised of ethylene vinyl alcohol (EVOH), and an outer layer formed of polyamides. The use of the tube for a hydrogen feeding hose for a fuel cell is considered to be merely intended use, where a hose of the same materials is capable of use for hydrogen feeding in a fuel cell, where such is also provided in the preamble only, and fails to breathe life into the body of the claim which merely recites materials used for hose layers. The patent to Ostrander discloses all of the recited structure with the exception of using EVOH in combination with fluorine based thermoplastics, where Ostrander only uses EVOH in situations where polyamides make up the inner layer, and forming the outer layer of polybutylene terephthalate (PBT). The patent to Fukushi discloses that it is known in the art to form a multilayer hose for use with fuels with an the use of PVDF and ETFE being possible for the layers and that EVOH can also be used as a barrier layer used in combination with other layers of fluorine based thermoplastics to improve the barrier properties of the hose to better block permeation of gases. It would have been obvious to one skilled in the art to modify the hose in Ostrander by using the EVOH barrier layer in combination with the inner PVDF or ETFE layers as such is known in the art to provide further barrier properties and protect against permeation of gases as suggested by Fukushi to make the hose more useful.

The patent to Kodama discloses the recited multilayer hose for fuel transport comprising an inner layer 1, where the inner layer can be formed of PVDF or ETFE, and the outer layer 2 outside of the inner layer and can therefore be considered an outer layer can be formed of polyamides or a polyester resin including PBT can be used in place of polyamide. It would have been obvious to one skilled in the art to substitute PBT for use in the outer layer of Ostrander in place of polyamide as suggested by Kodama as such are equivalent materials used interchangeably, and where PBT would have certain beneficial qualities over the polyamide for use in specific environments and would provide different properties for use in different environments to make the hose more useful for a wider range or applications.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrander in view of Fukushi and Kodama as applied to claims 1, 3, and 4 above, and further in view of Blasko. The patent to Ostrander as modified discloses all of the recited structure with the exception of using ethylene fluorinated ethylene propylene (EFEP) for the inner layer. The patent to Blasko discloses that it is old and well known in the art that EFEP can be used in place of ETFE interchangeably where EFEP is more melt processible. It would have been obvious to one skilled in the art to modify the hose in Ostrander as modified by substituting EFEP for the other fluoropolymers used in the inner layer as suggested by Blasko as such would be more melt processible and would provide different properties for use in different environments making the hose more useful for a wider range of applications.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrander in view of Fukushi and Kodama as applied to claims 1, 3, and 4 above, and further in view of Nishino. The patent to Ostrander as modified discloses all of the recited structure with the exception of providing a polyurethane based adhesive layer to connect the layers together. The patent to Nishino discloses that it is old and well known in the art that ETFE and PVDF can be used for hose inner layers and in order to better adhere this and other layers together in the hose, including barrier layers, a polyurethane based adhesive can be used. It would have been obvious to one skilled in the art to modify the hose in Ostrander as modified by providing layers of polyurethane based adhesive to help bond layers together as suggested by Nishino as such would provide more secure connection of dissimilar layers, and would provide different properties for use in different environments making the hose more useful for a wider range of applications.

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostrander in view of Fukushi and Hibino (712). The patent to Ostrander discloses all of the recited structure, including using polyurethane as an adhesive layer, with the exception of using EVOH in combination with fluorine based thermoplastics, where Ostrander only uses EVOH in situations where polyamides make up the inner layer, using such a fuel hose in combination with a fuel cell with a source of hydrogen fuel, and forming the outer layer of polybutylene terephthalate (PBT). The patent to Fukushi discloses that it is known in the art to form a multilayer hose for use with fuels with an the use of PVDF and ETFE being possible for the layers and that EVOH can also be used as a barrier layer used in combination with other layers of fluorine based thermoplastics to improve the barrier properties of the hose to better block permeation of gases. It would have been obvious to one skilled in the art to modify the hose in Ostrander by using the EVOH barrier layer in combination with the inner PVDF or ETFE layers as such is known in the art to provide further barrier properties and protect against permeation of gases as suggested by Fukushi to make the hose more useful. The patent to Hibino discloses the recited multilayer hose for fuel transport, including for use with a hydrogen fuel filled fuel cell as well as other fuels, comprising an inner layer 2 which can be made of various fluororesins, where the inner layer can be formed of PVDF or ETFE, and the outer layer 4 outside of the inner layer and can therefore be considered an outer layer can be formed of polyamides or a polyester resin including PBT can be used in place of polyamide, or various other materials are also shown to be equivalent and used for the outer layer which can be made of the same or different material from that of the inner layer, where a barrier layer is also provided 3 which is made of metal. It would have been obvious to one skilled in the art to substitute PBT for use in the outer layer of Ostrander in place of polyamide as suggested by Hibino as such are equivalent materials used interchangeably, and where PBT would have certain beneficial qualities over the polyamide for use in specific environments and would provide different properties for use in different environments to make the hose more useful for a wider range or applications, and that such a hose can be used not only for fuel, but specifically for use in combination with hydrogen fuel filled fuel cells where it would have been obvious to use the hose of Ostrander in combination with fuel cells filled with hydrogen fuel as suggested by Hibino where such is an alternate use for the hose and the reference to Hibino teaches the hose of Ostrander is capable of use in combination with these types of fuel as well.

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hibino (712) in view of Ostrander. The reference to Hibino discloses all of the recited structure with the exception of using EVOH as the intermediate barrier layer, using PVF as one of the fluororesins used for the inner layer, and providing a polyurethane adhesive layer. It would have been obvious to one skilled in the art to modify the intermediate barrier layer of Hibino by substituting EVOH as such is another known equivalent intermediate barrier layer used in combination with fluororesins and PBT in fuel hoses, to use PVF as the inner fluororesin material as such is equivalent to ETFE and other fluororesins, where Hibino teaches PVDF which is a form of PVF, and to provide a polyurethane bonding layer to connect the layers together thereby forming an adhesive layer as suggest by Ostrander where such would provide for a more flexible hose, suggest an equivalent material known for use for inner layers of fuel hoses when fluoropolymers are used, and to insure the layers of different materials stay connected together to thereby prevent premature failure and save money in replacement costs.

Response to Arguments

Applicant's arguments filed July 19, 2005 have been fully considered but they are not persuasive. With respect to the argument directed at the combination of Ostrander with Fukushi and Kodama, specifically with respect to the reasoning for combining, one skilled in the art would recognize the equivalence of materials based upon the teachings of the prior art and would also know the properties of polyamides verses PBT and would understand that in more volatile environments than polyamides are resistant to, therefore the substitution of one for the other in a more volatile environment would be obvious to one skilled in the art. The references themselves teach the use of both polyamides and PBT for layers in tubes and that there is an equivalence when one material or the other can be chosen depending on the environment in which the hose it to be utilized. There are no further arguments with respect to the remaining claims and rejections other than those set forth above.

As set forth above, due to the granting of the petition rejoining claims 7-12, and in light of the fact that these claims could have been finally rejected in the previous office action, the instant office action is being held as final due to the fact that the additional language found in claims 7-12 required the new rejection of these claims. The only new rejection set forth above is directed to new claims 7-12, where the remaining office action with respect to claims 1-6 previously considered and rejected remains the same as the previous office action.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James F. Hook whose telephone number is (571) 272-4903. The examiner can normally be reached on Monday to Wednesday, work at home Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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